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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/893,995	06/29/2001	Seong Woo Sohn	49128-5023	5675

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MORGAN LEWIS & BOCKIUS LLP
1111 PENNSYLVANIA AVENUE NW
WASHINGTON, DC 20004

EXAMINER

DEB, ANJAN K

ART UNIT	PAPER NUMBER
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2858

DATE MAILED: 08/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/893,995

Applicant(s)

SOHN, SEONG WOO

Examiner

Anjan K Deb

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1,3-4,10,18 are rejected under 35 U.S.C. 102(b) as being anticipated by Ichioka (US 5,546,013 A).

Re claims 1, 3-4, 10,18 Ichioka discloses probe frame assembly (Fig. 1) of an inspection apparatus for a liquid crystal display device 12, comprising at least two separate probe frame bodies (30,40) provided above an upper surface of a chuck (substrate holder 14) for simultaneously applying test pattern signals (test signal) from multiplexer (112)(Fig. 11) to shorting bars (shorting ring 60)(Fig. 2) provided on one or more liquid crystal display panels (substrate 10 with LCD array 12).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. Claims 2, 6-9, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ichioka (US 5546013 A) in view of Hayashida (US 6,137,300 A).

Re claims 2,6-9,19 Ichioka discloses probe frame assembly (Fig. 1) of an inspection apparatus for a liquid crystal display device 20, probe frame bodies includes probe frame contact pins being in contact with the shorting bars (shorting ring 60)(Fig. 2) and delivering test pattern signals to probe frame contact pins 38. Contact pins 38 are broadly interpreted as pogo-pins, which are spring, loaded pins and are well known in the art.

Ichioka did not expressly disclose a vacuum pad that is drawn to the chuck when a vacuum is applied and an alignment-adjusting member and positioning pogo pin set to align with pogo pin contact.

Hayashida (US 6,137,300 A) discloses test probe device for a liquid crystal display panel 20 and test probe 2 positioning method comprising an alignment member and applying vacuum to suck display panel 20 onto a stage 9 (Fig. 1A).

At the time of the invention it would have been obvious for one of ordinary skill in the art to modify Ichioka by adding alignment member disclosed by Hayashida and applying vacuum disclosed by Hayashida for positioning liquid crystal display panel for testing by applying test signals to pogo-pins.

5. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ichioka (US 5546013 A).

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Re claim 5, Ichioka did not expressly disclose frame assembly has at least three separate probe frame bodies that simultaneously apply test patterns to at least six liquid crystal display panels.

Duplication of Parts (MPEP. 2144.04)

In re Harza, 274 F.2d 669, 124 USPQ 378 (CCPA 1960) (the court held that mere duplication of parts has no patentable significance unless a new and unexpected result is produced.).

At the time of the invention it would have been obvious for one of ordinary skill in the art to modify Ichioka by adding plurality of separate probe frame bodies for testing plurality of liquid crystal display panels.

6. Claims 11-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashida (US 6,396,299 B1) in view of Ichioka (US 5,546,013 A).

Re claims 11,13,16 Hayashida discloses method and apparatus for testing LCD substrate 1 comprising a probe frame 13 having pogo-pins (column 5 lines 17-23) for contacting contact pads on LCD substrate 1 that is drawn to the chuck when vacuum is applied (on suction table 17 on stage 18), alignment member (manipulator 13a)(column 5 lines 33-37), electro-optic modulator (light source 14) for irradiating 20 the LCD substrate 1 surface for detecting a defect (Fig. 1).

Hayashida did not expressly disclose multiplex board.

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Ichioaka discloses a chuck loaded with liquid crystal display panel and multiplex board (multiplex 112) (Fig. 11) for applying test pattern signals (test signal) to shorting bars (shorting ring 60)(Fig. 2).

At the time of the invention it would have been obvious for one of ordinary skill in the art to modify Hayashida by adding multiplex board disclosed by Ichioaka for selectively applying test pattern signals to LCD panel contact pads.

Re claim 12, the combination system of Hayashida as modified by Ichioaka did not expressly disclose frame assembly has at least three separate probe frame bodies that simultaneously apply test patterns to at least six liquid crystal display panels.

Duplication of Parts (MPEP. 2144.04)

In re Harza, 274 F.2d 669, 124 USPQ 378 (CCPA 1960) (the court held that mere duplication of parts has no patentable significance unless a new and unexpected result is produced.).

At the time of the invention it would have been obvious for one of ordinary skill in the art to modify the combination system of Hayashida and Ichioaka by adding plurality of separate probe frame bodies for testing plurality of liquid crystal display panels.

Re claims 14-15, Hayashida did not expressly disclose a cable and connector.

Ichioaka discloses cable 42 for connecting each probe (pin) 38 to multiplexer in drive unit 44 controlled by test controller 46. A connector is inherently disclosed as would be required for connecting cable to probe pins 38 in fixture 42 (Fig. 1).

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At the time of the invention it would have been obvious for one of ordinary skill in the art to modify Hayashida by adding a cable disclosed by Ichioka for connecting cable to probe pins for applying test signals to LCD panel for testing

Re claim 17, Hayashida discloses simultaneously applying test pattern signal (test signals) to shorting bars on crystal display panel (Fig. 2-3).

Pertinent Art

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Henley et al. (US 5,285,150) discloses method and apparatus for testing LCD panel segment 10 comprising an electro-optic sensor 30, and at least two probe frames 24 having contact pins for contacting LCD pads and detecting defect in LCD panel by applying test voltage signals to LCD panel and electro-optic imaging (Fig. 1).

Listwan (US 5,999,012) discloses method and apparatus for testing LCD panel 16 comprising probe frame 110 with pins 112 connected to electrodes 30,32 34 on LCD panel 16, pattern generator 120 applying test signal patterns through test pins to electrodes 30,32 34 on LCD panel for activating components on the LCD panel, and a light source 130 illuminates LCD panel 16, and a voltage sensitive sensing material 114 whose optical property varies as a function of voltage for detecting a defect in LCD panel (Fig. 4A).

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Contact Information

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Anjan K. Deb whose telephone number is (703) 308-2941. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, N. Le, can be reached at (703)-308-0750.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone numbers are (703)-308-0956 and (703)-305-4900.



Anjan K. Deb

Patent Examiner

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8/4/03

Tel: 703-308-2941

Fax : 703-746-4466

E-mail : anjan.deb@uspto.gov